

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.

a. NEW LICENSE

X

b. AMENDMENT TO:
LICENSE NUMBER

07-00455-29

c. RENEWAL OF:
LICENSE NUMBER

2. APPLICANT'S NAME (Institution, firm, person, etc.)

E.I. DuPont de Nemours & Company, Inc.

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
(302) 772-0271

3. NAME AND TITLE OF PERSON TO BE CONTACTED
REGARDING THIS APPLICATION

Frederick F. Wham, Jr.

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
(302) 772-0271

4. APPLICANT'S MAILING ADDRESS (Include Zip Code)

(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)

Edge Moor Plant
104 Hay Road
Wilmington, DE 19809

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED
(Include Zip Code)

Edge Moor Plant
104 Hay Road
Wilmington, DE 19809

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)

6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL

(See Items 16 and 17 for required training and experience of each individual named below)

FULL NAME

TITLE

a. Ronald Lewis Coppola

Supervisor Mechanical - Instruments

b. Thomas F. David (Alternate RPO)

Mechanical Supervisor-Instrument/Electrical

c.

7. RADIATION PROTECTION OFFICER

Frederick F. Wham, Jr.

Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.

8. LICENSED MATERIAL

L I N E NO.	ELEMENT AND MASS NUMBER A	CHEMICAL AND/OR PHYSICAL FORM B	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source) C	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME D
(1)	Cesium - 137	sealed source	Ohmart Model SHD	3 sources of 300 millicuries each.
(2)				
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL
E

(1) Ohmart Type Leverart 1004 Point Level Gauge

(2)

(3)

(4)

"OFFICIAL RECORD COPY"

ML10

04117

9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED.	NAME OF MANUFACTURER	MODEL NUMBER
	A.	B.	C.
(1)	Steel body holder	Ohmart	Model SHD
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT	MANUFACTURER'S NAME	MODEL NUMBER	NUMBER AVAILABLE	RADIATION DETECTED (alpha, beta, gamma, neutron)	SENSITIVITY RANGE (milliroentgens/hour or counts/minute)
	A	B	C	D	E	F
(1)						
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY	<input type="checkbox"/> b. CALIBRATED BY APPLICANT <i>Attach a separate sheet describing method, frequency and standards used for calibrating instruments.</i>
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12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
<input type="checkbox"/> (1) FILM BADGE <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) <input type="checkbox"/> (3) OTHER (Specify): _____ _____ _____		<input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY <input type="checkbox"/> OTHER (Specify): _____ _____ _____

13. FACILITIES AND EQUIPMENT (Check where appropriate and attach annotated sketch(es) and description(s).)

- ☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

14. WASTE DISPOSAL

- a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

- b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. **RADIATION PROTECTION PROGRAM.** Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures (*if needed*), day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.
16. **FORMAL TRAINING IN RADIATION SAFETY.** Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.
 - a. Principles and practices of radiation protection.
 - b. Radioactivity measurement standardization and monitoring techniques and instruments.
 - c. Mathematics and calculations basic to the use and measurement of radioactivity.
 - d. Biological effects of radiation.
17. **EXPERIENCE.** Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

18. CERTIFICATE

(This item must be completed by applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 30, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

WARNING.—18 U.S.C., Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

a. LICENSE FEE REQUIRED
(See Section 170.31, 10 CFR 170)

(1) LICENSE FEE CATEGORY: 3P

(2) LICENSE FEE ENCLOSED: \$60.00

b. CERTIFYING OFFICIAL (Signature)

c. NAME (type or print)

Charles E. Price

d. TITLE

Radiation Protection Officer

e. DATE

June 20, 1985

ITEM 15 - RADIATION PROTECTION PROGRAM

A. PROCUREMENT

Purchase of by-product materials must be authorized by the Purchasing Department representative in the Radioisotope Committee (DuPont Engineering Department).

Shipments will be directed to the attention of the RPO (Radiation Protection Officer) or the user.

B. RECEIPT AND STORAGE

On receipt of the radioactive materials, the RPO or user will be notified. He will survey the shipment and provide storage facilities and handling equipment as necessary.

Access to stored materials will be controlled by the RPO or user. Materials stored in unrestricted areas will be secured against unauthorized removal (see Part 20.207).

Shipping containers will be opened only in the presence of the RPO or user.

Sources will be inspected visually for evidence of damage in shipment. Damaged sources will be suitably packaged and returned to supplier.

C. INSTALLATION AND USE

1. By-product material shall be used by or under the supervision of the user or the Radiation Protection Officer.
2. Installation, initial radiation survey of devices, relocation, maintenance, repair, and removal from service of the devices containing licensed material and disposal of sealed sources containing licensed material used in the devices shall be performed by any gauge manufacturer or other persons specifically authorized by the commission to perform such services. Removal and reinstallation of gauges for routine maintenance of related process equipment shall be performed by plant forces under the supervision of the Radiation Protection Officer or his alternate. (See attached procedure Exhibit A).
3. All personnel directly concerned with using by-product material will be supplied with film badges.
4. Areas will be surveyed after installation or during use of by-product material to insure that levels of radiation do not exceed those permitted by Part 20.101 or Part 20.105 as appropriate.
5. All sources and containers of by-product material will be labeled, and storage and working areas posted in accordance with provisions of Part 20.
6. Leak tests are made using an Ohmart WT-926 Leak Test Kit every six (6) months in accordance with instructions enclosed with the kits. The leak tests are quantitative and are capable of detecting 0.005 micro-curie of radioactivity.

ITEM 15 - RADIATION PROTECTION PROGRAM -- cont'd

7. On completion of installation or permanent removal of by-product material, the area will be surveyed.

D. DISPOSAL AND TRANSFER

1. Sources damaged in shipment or in subsequent use will be suitably packaged and returned to the supplier for repair or disposal. Sealed sources found to be leaking will be sealed in a double layer of polyethylene. The user will subscribe to a leak detection service for leak testing of sealed sources.
2. Sources no longer needed will be transferred to a licensed waste disposal concern or other authorized by-product material licensee.
3. No burial or burning of by-product material is planned or contemplated.

E. EMERGENCY PROCEDURES

1. Any evidence or suspicion of overexposure of personnel to radiation will be reported immediately to the Radiation Protection Officer (RPO).
2. Any occurrence, such as fire or explosion, which may cause the release of radioactive material to the area will be reported immediately to the Radiation Protection Officer (RPO). He will evaluate the hazard; and if contamination has occurred, he will take steps to prevent the spread of contamination. If necessary, personnel will be evacuated from the area and initial steps taken to decontaminate. Personnel will be checked for possible contamination before leaving the area as conditions permit.
3. Theft or loss of by-product material will be reported immediately to the Radiation Protection Officer.
4. Reports of theft, loss, or other incidents involving by-product material will be made in accordance with Parts 20.402 and 20.403 as appropriate.

F. RECORDS

At the conclusion of license coverage and during the coverage period as requested by the RPO, the user will summarize the use of by-product material obtained under this license. The RPO will incorporate this information into his records as required by various provisions of Parts 20 and 30.

The following records are included:

1. Records of receipts, transfers, and disposals of by-product material.
2. Results of individual radiation exposures (film badge reports, etc.).
3. Results of survey (see Part 20.201).

ITEM 10 - FORMAL TRAINING IN RADIATION SAFETY

The Radiation Protection Officer (Frederick F. Wham, Jr.) and Alternate Radiation Protection Officer (Thomas F. David) have successfully completed CES8524 - "Radiation Safety", at Northwestern University. In addition, both have received training at the Ohmart Corporation. Major topics covered and certificates are attached.

FORMAL TRAINING - RADIATION SAFETY - FREDERICK F. WHAM AND THOMAS F. DAVID

Frederick F. Wham and Thomas F. David have received certificates for successfully completing course CES8524 - "Radiation Safety" at Northwestern University. Course included the following major topics:

- A. Principles and practices of radiation protection.
- B. Radiation measurements and monitoring techniques and measurement.
- C. Mathematics and calculation basic to the use and measurement of radioactivity.
- D. Biological effects of radiation.

This course is approved by the U.S. Nuclear Regulatory Commission and satisfies the basic procedures in obtaining a license in the use of radioisotopes

FFW06

ITEMS 17 - EXPERIENCE

F.F. WHAM, JR.

F.F. Wham, Jr. has been employed by the DuPont Company for 30 years in various levels of supervision in the Production Division. At the present time he is a Reliability Engineer in charge of various Preventive Maintenance programs.

A graduate of The Citadel, he holds a Bachelor of Science degree in Chemistry. He has attended various training programs including Radiation Safety Training at Northwestern and at Ohmart.

T.F. DAVID

Tom David has been employed by the DuPont Company for 17 years. During this time has been involved in Instrument and Electrical Maintenance. He is a graduate of Drexel Institute of Technology and holds a Bachelor of Science Electrical Engineering degree. His area of responsibility has included assisting Ohmart personnel in the installation, removal and checking of Ohmart gauges. He has attended various job training programs including Radiation Safety Training at Northwestern and at Ohmart.

FFW06

EXHIBIT A

REMOVAL OF GAUGES BY PLANT FORCES

The following procedure is to be followed for the removal and reinstallation of gauges for routine maintenance of related equipment.

1. The gauge will be closed and locked and area surveyed to assure proper lockout.
2. The gauge will be removed from area and placed in radiation storage area to prevent unauthorized removal.
3. The gauge will be reinstalled after completion of maintenance on related equipment.
4. Film badges will be used by all personnel directly concerned.
5. The work will be supervised by the Radiation Protection Officer or Alternate Radiation Protection Officer.

FFW06
June 21, 1985

Northwestern University

Technological Institute

THIS IS TO CERTIFY THAT

FREDERICK F. WHAM JR.

WAS A PARTICIPANT IN THE

CONTINUING ENGINEERING STUDY

CES 8524: RADIATION SAFETY
May 6-10, 1985



Herman Lember 3.0 C.E.U. (equivalent)

PROFESSOR

Will O. Cohen

ASSOCIATE DEAN

05/10/85

DATE

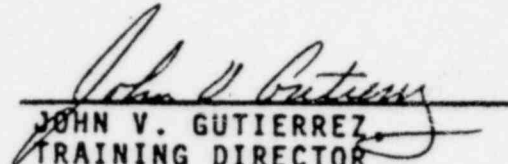
CERTIFICATE OF PROFICIENCY

THIS IS TO CERTIFY THAT

FREDERICK F. WHAM

HAS SUCCESSFULLY COMPLETED AN OHMART TRAINING COURSE INCLUDING:
PRINCIPLES AND PRACTICES OF RADIATION PROTECTION, RADIOACTIVITY
MEASUREMENT AND MONITORING, MATHEMATICS AND CALCULATIONS, BIOLOGICAL
EFFECTS OF RADIATION, COMMON U.S.N.R.C. REGULATIONS, WASTE DISPOSAL
AND EMERGENCY PROCEDURES.

ohmart technical™
 **TRAINING SCHOOLS**


JOHN V. GUTIERREZ
TRAINING DIRECTOR

Date: March 6, 1985

Northwestern University

Technological Institute

THIS IS TO CERTIFY THAT

THOMAS F. DAVID

WAS A PARTICIPANT IN THE

CONTINUING ENGINEERING STUDY

CES 8524: RADIATION SAFETY
May 6-10, 1985



Herman Lember

PROFESSOR

3.0 C.E.U. (equivalent)

W. E. E. E.

ASSOCIATE DEAN

05/10/85

DATE

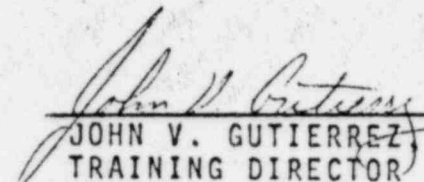
CERTIFICATE OF PROFICIENCY

THIS IS TO CERTIFY THAT

THOMAS F. DAVID

HAS SUCCESSFULLY COMPLETED AN OHMART TRAINING COURSE INCLUDING:
PRINCIPLES AND PRACTICES OF RADIATION PROTECTION, RADIOACTIVITY
MEASUREMENT AND MONITORING, MATHEMATICS AND CALCULATIONS, BIOLOGICAL
EFFECTS OF RADIATION, COMMON U.S.N.R.C. REGULATIONS, WASTE DISPOSAL
AND EMERGENCY PROCEDURES.




JOHN V. GUTIERREZ
TRAINING DIRECTOR

Date: March 6, 1985

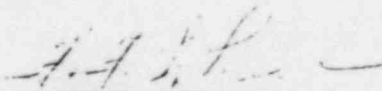
cc: J.E. Sylvanus
V.P. Beiriger
J.S. Dixon
N. Liberman

Edge Moor, Delaware
March 07, 1985

R.K. URIAN

OHMART TRAINING COURSE

On March 5 and 6, 1985, Tom David and the writer attended the Ohmart Training Course on "Principles and Practices of Radiation Protection, Radioactivity Measurement and Monitoring, Mathematics and Calculations, Biological Effects of Radiation, Common U.S.N.R.C. Regulations, Waste Disposal and Emergency Procedures". A certificate of proficiency was awarded to us at the completion of an examination covering the subjects listed.



J. J. WHELAN, AREA ENGINEER-RELIABILITY

FFW:PMG:FFW06

AGENDA

RADIATION SAFETY

12 HOURS

TIME	TOPIC - DAY 1	LOCATION	MANUAL SECTION
8:30	Welcome and Introduction	Class	1
9:45	Principles and Practices of Radiation Protection* A. Basic Atomic Theory B. Radioactive Materials C. Radiation Interaction with Matter	Class	1
10:30	Radioactivity Measurement Standardization* A. Terms and Definitions	Class	2
11:00	Monitoring Instruments and Techniques* A. Detection Instruments B. Personnel Dosimetry	Class	2
12:00	Mathematics and Calculations Basic to the Use of Measurement of Radioactivity*	Class	3
1:00	- LUNCH -		
2:00	Biological Effects of Radiation* A. Internal Radiation Hazard B. Protection from Internal Radiation Hazard C. External Radiation Hazard D. Protection from External Radiation Hazard E. Review of Regulatory Guide 9.20	Class	4
3:00	Source Holder Handling Procedures A. Verification of Device Integrity B. Installation Requirements C. Lock Out Procedures D. Removal and Reinstallation Procedures. E. Storage	Class	5, 9
3:30	Lab Session (Density, Level and Belt Weigh Devices) A. Leak Test and Shutter Check B. Surveys C. Removal and Reinstallation		
4:30	Plant Tour	Plant	-
5:00	SESSION ENDS FOR THE DAY		
* These items are listed in item 16 of US-NRC (Formal Training in Radiation Safety).			

ohmart radiation™
SAFETY SCHOOL

AGENDA

RADIATION SAFETY

12 HOURS

TIME	TOPIC - DAY 2	LOCATION	MANUAL SECTION
9:30	US - NRC Regulations and License Interpretation* A. Regulations for Users of Nuclear Gages B. Excerpts from Title 10, Chapter 1, Code of Federal Regulations	Class Class	5 8
9:30	Lab Session* US - NRC By Product Material License A. NRC Required Information B. License Application Information	Class	10
10:00	Radio Active Material Waste Disposal Procedures*	Class	5,9
10:30	Shipping Radioactive Materials* A. Classification B. Labeling C. Shipping Containers D. Bill of Lading Information	Class	6
11:00	Emergency Procedures* A. Guidelines B. Loss or Theft C. Fires and Explosions D. Incident Reports.	Class	7
11:30	Radiation Safety Examination *	Class	A11
1:00	SESSION ENDS FOR THE DAY		
* These itmes are listed in item 16 of US-NRC (Formal Training in Radiation Safety).			

BETWEEN: William O. Miller, Chief
License Fee Management Branch
Office of Administration

John E. Glenn, Chief
Nuclear Materials Section B
Division of Engineering and
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: E. I. Du Pont De Nemours + Company

Application Dated: 7/12/85

Control No.: 04117

License No.: 07-00455-29

2. FEE ATTACHED

Amount: \$ 60.00

Check No.: 298-09462

3. COMMENTS

Signed

Brenda Platchek

Date

7/18/85

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 30 - \$60

2. Correct Fee Paid. Application may be processed for:

Amendment ✓

Renewal

License

Signed

John E. Glenn

Date

8/9/85

"SECTION COPY"

DU PONT TR 1-2 **E. I. du Pont de Nemours & Company** No 298-09462
INCORPORATED

EDGE MOOR, DEL. 7/8/85 (DATE) 8-26
430

Pay ****60**** DOLLARS NO CENTS

To the order of ****RADIOISOTOPES LICENSING BRANCH****
U.S. Nuclear Regulatory Commission
of Washington, D.C.

TO
MELLON BANK N.A.
PITTSBURGH, PENNSYLVANIA

NOT GOOD FOR MORE THAN \$1500.00
E. I. DU PONT DE NEMOURS & COMPANY -
CASHIER ACCOUNT NO. 298

Lynn A. Zerbe

BETTER THINGS FOR BETTER LIVING ... FROM DU PONT

⑈29809462⑈ ⑆043000261⑆ 127⑈8098⑈